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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/670,596	09/29/2000	Tomohiko Otose	N00195US	4446

30743 7590 08/21/2003

WHITHAM, CURTIS & CHRISTOFFERSON, P.C.
11491 SUNSET HILLS ROAD
SUITE 340
RESTON, VA 20190

EXAMINER

PHAM, HAI CHI

ART UNIT	PAPER NUMBER
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2861

DATE MAILED: 08/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/670,596

Applicant(s)

OTOSE ET AL.

Examiner

Hai C Pham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-15,17 and 18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-8,15 and 18 is/are rejected.
- 7) ☒ Claim(s) 9-14 and 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Objections

1. Claim 14 is objected to because of the following informalities:
 - Lines 1-2, "according to claim 5" should read --according to claim 6--, since a typographical error was introduced during the amendment of claim 14, as filed 03/11/02, where the claim dependency was inadvertently changed from the parent claim 6, as originally claimed, to claim 5.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2, 4-8, 15, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fork (U.S. 6,137,523) in view of Fork et al. (U.S. 6,072,517).

Fork ('523) discloses an optical printer head of reduced footprint by integrating the shift registers and organic light emitting diodes, the optical printer head comprising a picture element array (OLED array 50) composed of picture elements containing light-emitting devices (OLEDs) arranged in directions of a picture element line and a picture element string in two dimensions (columns of light emitting pixels 52, 54, 56,

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Figs. 2A-C), a horizontal scanning circuit to feed data signals to each picture element string in said picture element array (circuitry including shift registers 62, 64, 68, which clocks light emission signals Data A, Data B, Data C from the data lines 60, 70, 80, respectively), and a vertical scanning circuit to sequentially select and activate each picture element line in said picture element array (circuitry consisting of shift register stages 72, 74, 76, 68 to sequentially drive each light emitter in the columns 52, 54, 56) (col. 4, lines 51-65), wherein said horizontal scanning circuit and said vertical scanning circuit comprise poly-crystal thin-film transistors (shift registers using poly-[crystalline]-silicon TFTs) (col. 6, lines 15-23). Fork ('523) teaches the integration of the scanning circuits (shift registers) and the OLED pixels on the same substrate where the drive electronics (shift registers) are built either as an underlying layer of the OLED pixels on a common substrate (Figs. 2-5) (col. 6, lines 15-23 and 57-65) or as a peripheral circuit separated from the pixel area (Fig. 7), which would require an additional layer of metallization (col. 8, lines 20-30). In other words, the drive electronics and the OLED pixels are built on a common substrate in either case.

However, Fork ('523) fails to teach the horizontal scanning circuit being separated from the vertical scanning circuit as two distinct peripheral circuits. Nevertheless, Fork ('523) does suggest that other embodiments of the same optical printer can be used by the inclusion of the commonly assigned U.S. Patent application Serial No. 08/785,233, now a U.S. Patent No. 6,072,517 issued to Fork et al., which discloses another approach for building the drive electronics in two distinct horizontal and vertical peripheral scanning circuitries (Fig. 2). Therefore, it would have been

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obvious at the time the invention was made to a person having ordinary skill in the art to modify the device of Fork ('523) to include the separate peripheral scanning circuits as taught by Fork et al. ('517) The motivation for doing so would have been to allow a larger number of OLED pixels to be built in a stage without the intermixing of the drive electronics and associated signal lines and thus to provide a higher printing resolution.

With regard to claims 4-8, 17-18, Fork ('523) further teaches:

- means for setting amounts of light to be emitted by the picture element array (a drive current being controlled by the corresponding light emission signal gated by the shift registers 72, 74, 76, 68 to controllably drive the light emitter),
- the vertical scanning circuit is so operated that, in a state in which the picture element array is disposed facing a surface of a photosensitive body (14) in a manner that a direction of said picture element line is parallel to a rotation axis of said photosensitive body (Fig. 1), activates said picture element line containing each picture element while each picture element contained in each picture element string in said picture element array is passing sequentially on a same spot on a surface of said photosensitive body, with rotation of said photosensitive body (col. 4, lines 22-49),
- the number of picture elements in said each picture element string activated by said vertical scanning circuit being able to be changed (each OLED pixel in the array being individually driven by a current source controlled by the vertical scanning circuit and activated by the corresponding light emission signals or image signal data, which would selectively turn on and off each individual pixel).

Allowable Subject Matter

4. Claims 9-14, and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. The following is a statement of reasons for the indication of allowable subject matter: the primary reason for the indication of the allowability of the claimed invention is the inclusion of "said picture elements constituting said picture element array are divided into a plurality of groups of picture elements in directions of a same line and of a same string" and "activation of said picture elements is performed for every group of said picture element of said same line", in the combination as currently claimed in each of the claims 9-12, the inclusion of "a shift register for shifting data signals in said horizontal scanning circuit to correct the detected positional deviation", in the combination as currently claimed in each of the claims 13-14, the inclusion of "a plurality of light emitting devices are provided in each picture element", in the combination as currently claimed in claim 17, and which are not found taught or fairly suggested by the prior arts made of record, considered alone or in combination.

Additional Prior Art

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Shimoda et al. (U.S. 6,480,212 B1) discloses an optical printer head including an EL pixel array and its control circuits being integrated on a common substrate, the control circuits constituting the horizontal and vertical scanning circuitry in the form of the X-driver and the Y-driver.

Response to Arguments

7. Applicant's arguments with respect to claims 1-2, 4-15, 17-18 have been considered but are moot in view of the new grounds of rejection presented in this Office action.

8. Applicant's arguments filed 06/11/03 have been fully considered but they are not persuasive with regard to the combination of Fork '657 and Fork et al. '517 in which Fork et al. '517 is incorporated in reference in Fork '657. Applicants argue that "Fork et al. '517 literally adds nothing to Fork '657 and that the propriety of any such modification is unaffected by the fact of the incorporation by reference". The examiner respectfully disagrees. In both Fork '657 and Fork et al. '517, the same optical printer head is taught provided with an OLED pixel array along with the drive electronics formed on a substrate, but each prior art teaches a different approach to built the OLED pixel array and the drive electronics as well as the different modes of operation of the printer head. In other words, the teaching of each of the above prior arts constitutes a different embodiment for the same optical printer head. Thus, the content of Fork et al. '517, for instance, would not be relied upon under the rejection under 35 U.S.C. §102 applying

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Fork '657, and the rejection under 35 U.S.C. §103 over Fork '657 in view of Fork et al.

'517 is still proper.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai C Pham whose telephone number is (703) 308-1281. The examiner can normally be reached on T-F (8:30-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Benjamin R. Fuller can be reached on (703) 308-0079. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722, (703) 308-7724, (703) 308-7382, (703) 305-3431, (703) 305-3432.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



HAI PHAM
PRIMARY EXAMINER

August 14, 2003